

REMARKS UNDER 37 CFR § 1.111

Formal Matters

Claims 7 and 9-11 were previously examined and rejected. Claims 1-6 and 8 were previously cancelled.

In the Office Action, the Examiner did not acknowledge the pendency of claim 12 which was added by the Amendment filed on April 13, 2004. Applicants consider claim 12 to remain pending and request entry of the claim and examination thereof.

Accordingly, claims 7 and 9-12 are pending in the application.

Rejections Under 35 U.S.C. §112

Claim 7 was rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. Specifically, the Examiner finds that there is no support in the specification, original claims or drawings for describing the diameters of the holes in the first layer.

Applicants respectfully disagree. A description of the hole diameters is found in the lines 17 and 18 of page 3 of the specification. Withdrawal of this rejection is respectfully requested.

Rejections Under 35 U.S.C. §103

Claim 7 was rejected under 35 U.S.C. §103(a) as being unpatentable over Elder et al. (U.S. Patent No. 3,770,560) in view of Haslow et al. (U.S. Patent No. 5,833,759).

While Haslow et al. teaches drilling holes having a diameters less than 75 microns into a substrate, it would not be obvious to one skilled in the art to combine the teachings of Haslow et al. with Elder et al. to provide the claimed laminated material comprising a first layer having laser-ablated holes therein having diameters no greater than one micron. Making holes which are no greater than one micron in diameter requires a laser light beam having a diameter that is only a few wavelengths. As such, very tight control of the material's flatness is required in order to keep the drilling process in focus. On the other hand, when drilling holes having diameters closer to 75 microns, which require use of a laser light beam having diameters which are magnitudes (hundreds of times) greater than the wavelength, focus of the beam is far less important to the quality of the drilling process. There is not indication in Haslow et al. that holes to be ablated are to be much less than 75 microns, and making holes having diameters anywhere close to 1 micron would not be possible utilizing the technology disclosed by Haslow et al. Accordingly, it would not have been obvious to one skilled in the art to look

to Haslow et al. to make 1-micron holes in the laminated material of Elder et al. Withdrawal of the rejection and allowance of claim 7 are respectfully requested.

Claims 9 and 10 were rejected under 35 U.S.C. §103(a) as being unpatentable over Elder et al. in view of Haslow et al. as applied to claim 7 above, and further in view of Sumiya et al. (U.S. Patent No. 4,786,558).

For at least the reasons discussed above with respect to claim 7, claims 9 and 10, which are dependent upon claim 7, are also not obvious in view of the cited references. Withdrawal of the rejection and allowance of claims 9 and 10 are respectfully requested.

Claim 11 was rejected under 35 U.S.C. §103(a) as being unpatentable over Elder et al. in view of Sumiya et al.

While Sumiya et al disclose surface roughness which are less than 20 microns, it would not have been obvious to combine such disclosure with Elder et al. The disclosure of Elder et al. is directed toward micro-machining laminates. Quite differently, the disclosure Sumiya et al. is directed toward composite films for what appears to be electronic memory components such as semiconductors. The intended smoothness of the film's surface is for the purpose of facilitating writability and erasability on the surface (see Col. 13, lines 66-68). Accordingly, one skilled in the art would not look to the disclosure of Sumiya et al. for its teachings on surface roughness in order to provide the laminate structure of claim 11. Withdrawal of the rejection and allowance of claim 11 are respectfully requested. As claim 12 is dependent upon claim 11, it is also allowable.

Conclusion

Applicant submits that all of the claims are in condition for allowance, which action is requested. If the Examiner finds that a telephone conference would expedite the prosecution of this application, please telephone the undersigned at the number provided.

The Commissioner is hereby authorized to charge any underpayment of fees associated with this communication, including any necessary fees for extensions of time, or credit any overpayment to Deposit Account No. 50-0815, order number AERX-070DIV.

Respectfully submitted,
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